

W. HAZLEMAN,
EDITOR AND PROPRIETOR.

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From the Southern Agriculturist.
What ought the Agricultural Convention to do? Being an Answer to a Letter on the subject, addressed by one of the Delegates to the Editor of the Southern Agriculturist, and now published by request.

My DEAR SIR,—I cheerfully comply with your request in suggesting "what will or ought to be the subjects upon which the Agricultural Convention, to be held at Columbia in November next, should act?" doing so, I must premise that the suggestions are not wholly my own; but the result of frequent conversations had during the past summer with agricultural gentlemen throughout different portions of the State. Against nothing which I suggest can the objection of novelty be urged. Impressed with the belief that we are to learn and not to teach, I have merely presented what other States have done, and leave the wisdom of the plans to recommend themselves.

Never were our agriculturists better prepared for useful and concerted action. For several years back, have I in my editorial relations with them recommended a General Convention, but not until the present have they received the recommendation with such almost entire unanimity. They have now shaken off their slumber, inquiry is every where afloat, and it is with a view of meeting the demand that I consent to your use of this letter, should it in your esteem merit publication.

In its memorial, the Convention should recommend to the Legislature:—

1st. **The appointment of an Agricultural and Geological Surveyor of the State.** The vast utility of such an officer to our agriculturists is best exemplified, when the duties he would be called upon to discharge are stated. He would travel through each district of the State in routine, and survey, 1st. Its geographical state and circumstances.

Under this head, observations and remarks predicated of the observations of others, might be made as to the state of the climate throughout the year—its effects upon animal and vegetable life, and its suitability to the successful cultivation and production of different staples. The soil, minerals, and face of the district might be also considered; with a view of presenting to our planters those tests of the kind and character of their lands, which are far too expensive for individual accomplishment.

2d. **State of Property.** Under this head observations might be made as to the extent of plantations in each district, whether large or small; whether owned and cultivated by resident or non-resident planters—by what kind of labor—whether by slave or free—and if by both, the relative productiveness of each.

3d. **Buildings or Rural Architecture.** Observations might here be made as to the style of building in each district. Whether best suited to the nature of the climate, the materials for building, or the purposes for which such buildings are intended. Under this head an intelligent and observant surveyor might present suggestions, which could not fail of producing among our planters an improved taste in the construction and arrangement of their plantation buildings.

4th. **Implements of Husbandry.** An enumeration of these might be made—new ones, and proper improvements on the old, might be suggested—by the adoption of which, much labor and time would be saved, that are now injudiciously expended.

5th. **Labor or Power.** What kind of used should be stated—whether manual, horse, mule, oxen, or steam, and what sort best adapted to the condition of the district.

6th. **Live Stock.** These ought to receive particular attention. The different breeds should be noticed, and the mode of raising and feeding, whether best suited to existing circumstances.

7th. **Improvements.** Under this head, very particular remarks should be made upon the roads, bridges, ferries, water and land carriages of the district—and every means of improving the same, whether by State, Corporation, or individual exertion, should be suggested.

These are some of the duties which an Agricultural and Geological Surveyor might discharge. I grant, that they appear numerous, and even beyond the acquirement of one man; but the difficulty is only in our own imagination. Similar surveys have been made in England, France, Belgium, Germany, and are now going on successfully in Russia and other portions of Europe. In our own country, they have been partially conducted in several of the States, and are now displaying their immense utility in the improved condition of the agriculture of Massachusetts. In that State, a

surveyor, whose duties are similar to those I have just enumerated, has commenced his work. Already has he gone over two or three counties, and published his report of their Geological and Agricultural condition. The amount of practical information which these reports embody is inappreciable; and while every farmer of Massachusetts must feel himself benefited, the agriculture of the whole Union must be improved by them.

In a recent journey through the State the demand for such an officer as I have described, met me at every stage. Every where uncultivated soils, with perhaps rich minerals under them, lay valueless for the want of some competent person to analyze and expose their riches. Farmers were all about leaving their exhausted lands, and taking from the country their labor and wealth; when just beside them, may have been opened the secret cause of all their failures and disappointments. To state one out of an hundred similar instances, a distinguished agriculturist assured me of the fact, that several years ago, at his own individual expense he had a portion of soil in his neighborhood examined, with the view of testing what component part it wanted, which rendered it so unpropitious to the cultivation of the fine cotton. The absent part was discovered, an further examination presented it in an adjacent and more spot. Since which period, from this discovery alone, lands in that vicinity have been enhanced in value at least fifty per cent. Let me repeat that this is only one out of an hundred instances of the kind I could adduce; and any one who has paid attention to the history of agriculture, could mention many more. The example of Count Chaptal, of France, should convince the most skeptical. That distinguished chemist purchased poor lands—examined and tended them upon scientific principles, and while others about him were reaping nothing but tares and thistles, his lands yielded him fifty and an hundred fold.

Secondly—The Convention should recommend the appointment of an Agricultural Professorship in our South Carolina College. No Seminary of learning is complete without such a professorship; and no well educated man, particularly in a country like ours, should consider himself accomplished without knowing at least something of the elements of agriculture. Such has not been the sentiment of gentlemen heretofore. They attend college, pass through a course of the classics, belle lettres, mathematics and a few other of the sciences, and return home knowing as little of the principles of that science, by means of which they are clothed, fed, and educated, as if it were a knowledge of bonnish acquirement, and only fit for their slaves. Even in the European Universities, years ago, agriculture was deemed unworthy of being taught as a science. But this sentiment of a feudal age has gradually worn away, and for an educated European not to know something of Botany, Natural Philosophy and Chemistry—these essential sciences which compose that of agriculture, is at present as remarkable as formerly, such acquirements were wonderful and liable to persecution.

It is often urged that the planter may pursue his vocation without such an elementary education. So indeed he may, and so may the physician pursue successful his profession without the study of anatomy, the materia medica, or any of the other branches of his science—but in both cases must they be considered quacks, for whom fortune and good circumstances have done more than the results of an enlightened experience.

Thirdly—The Convention should recommend the establishment of an Agricultural School in some healthy and central portion of the State. To this school should be attached a sufficient extent of arable land, on which might be conducted different agricultural experiments. And while in the school, the elements of agriculture should be taught, its practical effects should be tested in the fields, under the eyes and by the labor of the students themselves. As to the decided utility of such schools, we are not without example, that of Von Thier at Morgan, in Prussia, is well known to the most readers, and in our own country the Van Rensselaer Agricultural School in New York, and the farm school at Thompson Island, near Boston, afford full promise that such a system of education is neither time nor money thrown away. The latter school was instituted for the support and education of orphan and vagrant boys. They there receive an excellent English education; and while they are taught the scientific principles of agriculture, they follow out its details as a means of supporting themselves and the institution. The plan has succeeded beyond the most sanguine anticipation of its founders, and I speak with a knowledge of facts, when I say that in listening to the examination of this school, most of our planters would find themselves put to the blush at their own deficiency of professional knowledge, in contrast with that of many of the students who as yet have not numbered fifteen years. In a state like ours, where overseers are to be educated, their character formed, and their habits fixed—of what incalculable advantage would be the creation of such an institution.

Fourthly—The Convention should recommend the entire Reformation of our Free School system. In every district in the State schools would be supported out of the public fund. And in these schools the elements of agriculture with the other sciences should be taught in addition to which, some simple system of military tactics should be prepared, whereby the students

might be constantly and efficiently drilled. Objections may be raised to the expense which such a reformation might incur, but when we reflect that the child of every citizen will be thus educated alike, and with regard to our own domestic policy and institutions—all objection must vanish in the manifest advantages of the scheme. Pride of State, if nothing else, should awaken us upon this subject.

Fifthly—A thorough remodeling of our Militia and slave laws should be recommended. As they now stand, they are confused and altogether unsuited to our condition.

Sixthly—The annual appropriation of a sum of money should be recommended to be drawn by a State society, composed of delegates from the agricultural societies of each district, to be distributed by said society in premiums, for the production of such articles as may tend to advancement of the agriculture of the State.

Every planter in the State might become a competitor for such premiums, and a specification of the production of the article for which he competes may be landed in under oath, by the delegate who represents his district.

If an agricultural school be established, the meetings of such a society might be held once a year at the school: at which time an examination of the scholars might take place before the delegates. The offers for premiums compared—and if possible specimens or descriptions of them preserved in a proper laboratory or museum for the future use of the school and its visitors.

That such an appropriation of premiums would impart great interest to our agricultural pursuits, and be the direct means of introducing permanent improvements amongst us, has been amply illustrated by the example of other States.

These strike me as some of the most important subjects which should occupy the time and deliberation of the Convention.—Upon them, among other wants of the planters, the Legislature should be memorialized—not in a tone which may imply that we ask as a favor, but that we in justice claim as a right. Let the Convention be unanimous—let not incidental questions consume its session in idle or wrangling debate, and the result cannot fail of proving highly auspicious to the interest of the State.

Respectfully yours,
Charleston October 1839.

From the Southern Agriculturist.
EXPERIMENTS IN CULTIVATING CORN.
Barnwell, Sept. 20, 1839.

Mr. Editor.—Allow me to record in your valuable work the result of my experiments this season with five kinds of corn, and with two rows of each. The beds were five feet apart and the corn was planted in chops in the alleys of the last year's cotton beds, every four feet on the 21st of last March.

Nos. 1 and 2, with yellow West-India flint corn. In each chop of No. 1, two grains; and in each chop of No. 2, four grains were dropped.

In No. 3, two grains; and in No. 4, four grains of North-Carolina white gourd seed corn were dropped.

In No. 5, two grains; and in No. 6, four grains North-Carolina flint corn were dropped.

In No. 7, two grains, and in No. 8, four grains of white flint corn (obtained from Alfred Huger, Esquire) were dropped.

In No. 9, two grains; and in No. 10, four grains of Baden corn were dropped. Over each chop where two grains were dropped, one quart of cotton seed was placed, and over each chop with the four grains of corn, two quarts of cotton seed were placed. The corn was sowed for three days and two nights, in a strong solution of sulphate. It was well cultivated with the hoe and plough. The drought much injured the plants, and these ten rows were not sowed. I am induced to conclude the corn was much injured by these suckers, as they produced no corn.

On the fourth of this month, these ten rows were shelled and measured, after having been gathered about ten days. The product of sound corn was thus:—

No. 1, had 120 ears, and made 15 quarts, which is at the rate of 19 bushels and 7 quarts to the acre.

No. 2, had 134 ears, and made 17 quarts, or at the rate of 21 bushels and 25 quarts to the acre.

No. 3, had 111 ears, and made 21 quarts, which is equal to 26 bushels and 29 quarts to an acre.

No. 4, had 163 ears, and made 25 quarts, or at the rate of 32 bushels and 1 quart to the acre.

No. 5, had 108 ears, and made 14 quarts, which is equal to 17 bushels and 30 quarts to an acre.

No. 6, had 116 ears, and made 14 quarts and one pint, or equal to 18 bushels, 18 quarts, and 1 pint to the acre.

No. 7, had 117 ears, and made 23 quarts, or at the rate of 29 bushels and 12 quarts to the acre.

No. 8, had 141 ears, and made 28 quarts, or at the rate of 35 bushels and 28 quarts to the acre.

No. 9, had 194 ears, and made 27 quarts, or at the rate of 34 bushels and 19 quarts to the acre.

No. 10, had 262 ears, and made 38 quarts, or at the rate of 48 bushels and 22 quarts to the acre.

I calculate each row of corn as the 41st part of an acre, (210 feet square) leaving 2 1/2 feet out side of the first and last row of the acre. The Nos. which I wished to have 104 stalks of corn, lost about 14 stalks

each row, and those I wished to contain 308 stalks of corn, lost from 40 to 50 stalks to each row.

The Huger corn is at least two sizes larger, as it respects the stalk, length of the cob and of the blades, than any I have ever planted, and is a fine white flint grain. The yellow West-India corn is an early corn, very sound, and the first fit to grind. Those ten rows of corn were in a field of Baden.

I am, with respect, your ob't serv't
JOHN S. BELLINGER.

It is with pleasure we give place to the foregoing article of Dr. Bellinger. His experiments are exceedingly useful; and only want the test of a more extensive trial to render them worthy of general adoption.—We are convinced that the proper way to make large crops of corn in our State is to mature highly and to plant close. By such a plan, we have less land to attend through out the entire season, less trouble in gathering the corn, and much less care in guarding it from birds. We have ourselves tried similar experiments this season, the result of which shall be made public in due time.
EDITOR.

From the Southern Banner.

ALVARADO COTTON.—In accordance with our promise made last week, we copy below an article from the "Southern Silk Journal and Farmer's Register," an article relative to this new species of cotton, which is beginning to attract the attention of our farmers and planters. Since our last, we have had the pleasure of examining the small stock raised by Gov. Lumpkin the present season, and our estimate of its value has been generally enhanced. Judging from the specimens we have seen, and the statements of those whose experiments enabled them to form a correct opinion, we are induced to regard its discovery as a valuable acquisition to the wealth of the South; and are persuaded that it only needs to be known to be eagerly sought after.

One fact connected with it its culture will make it peculiarly valuable to the planters of this region and the Cherokee country, and other places in the same latitude. It will mature in three or four weeks less than ordinary cotton—thus removing one of the great obstacles to the culture of this article in this part of the State.

When should be pleased to see the experiment thoroughly tested thoroughly tested on a more extensive scale than has heretofore been practicable for the want of seed, with which we can furnish those desirous to make the trial.

From the Southern Silk Journal.

ALVARADO, OR MULTI-BOLLED COTTON.—We have seen a specimen of this new species of Cotton. It was in the hands Dr. Cooper, from Harris county, and may well be considered a vegetable wonder. The stalk was about 14 inches long, having short limbs projecting at distances of from two to four inches apart, on the extremities of which were from one to five bolls of matured Cotton of a superior staple. The most experienced cotton planters present pronounced it the most remarkable specimen they had ever witnessed. This stalk contained on the above short space, only 14 bolls, and was stated not to be a fair specimen of the growth of the Alvarado Cotton.

In confirmation of this, we perceive in the Macon Georgia Telegraph, that "Mr Stephen S. Wright, of Knoxville, Crawford County, of this State, has a few stalks from seed obtained of Dr. Cooper of Harris. They are about 6 feet high, on one 96, on an other 110 good bolls, besides forms that would not mature, were counted. One contains 27 matured bolls on a single foot!" It is by some called *okra* or *twain* cotton on account of its resemblance to the *okra* plant, and also on account of its productiveness; but it is named Alvarado, on account of its having been originally discovered on the Alvarado River, in Mexico. The bolls are about the same size as those of the ordinary cotton; and perhaps contains a greater weight of seed; nevertheless, Dr. Cooper assures us that his crop will produce at least 2,500 lbs. seed cotton to the acre the present year, notwithstanding one third of his crop has been destroyed by the drought. He has in his possession a certificate from a gentleman of Alabama, stating that his small crop this year has produced at the rate of 4,090 pounds to the acre.

NUTRITIVE QUALITIES OF CHARCOAL.—Though the importance of mixing charcoal with the food of animals, particularly that of swine, has been generally acknowledged, and its benefits extensively tested, still it has been supposed that it only acted as a corrective to the acid tendency of food, and facilitated fattening, by improving the health of the animal. Some experiments are, however, on record, which would seem to show that charcoal acts a more important part in the matter, than has usually been assigned to it.

In 1793, a family being driven from New York by the fever, were absent about six or eight weeks before it was deemed prudent to return. A number of fowls confined in a loft in the workshop of the house were forgotten at the time of leaving, and as it was known there was nothing provided for their subsistence, it was expected on the return, they would be found starved to death. To the astonishment of all, the fowls were found alive and fat, though there was nothing upon which they could have fed, except a quantity of charcoal and shavings; water being supplied from the grindstone through.

These facts coming to the knowledge of a gentleman in New York, as we learn from the Recorder, he instituted the following experiment. He placed a turkey in a box or enclosure, 4 feet long, 2 feet wide, and 3 or 4 feet high, excluded light as much as could be done, and allowed a free circulation of air, and fed the turkey with soft brick, broken fine powdered charcoal, and six grains of corn per day. The box was kept locked. At the end of the month, the turkey was killed in the presence of several gentlemen, was large and heavy, and on being opened was found filled with fat. Nothing, on dissection, was found in the gizzard and entrails but charcoal and brick. Last winter the experiment was repeated, and with the same success.

Several years since, in fitting out one of the Liverpool traders at New York, a pig on board was missing, and was supposed to have been lost. The cargo was taken on board, stowed, and the vessel sailed. It was now discovered that the pig was alive in the coal, hove, but as he could not be got at readily, it was concluded to leave him to his fate. He remained in this retreat until the passage was made, when his pigship was found to be not only alive and well, but materially improved in condition, though there was nothing, coal excepted, he could have swallowed.

When it is remembered that wood, sugar, and several other substances, some of which are most nutritive, are compounded of nearly the same original elements, it would seem possible, by animal chemistry, to convert them to the purpose of sustaining life; though all experiments with wood or charcoal have failed. The German chemists have converted wood into very palatable bread, by roasting and pulverizing; but calcination, it has been supposed, would destroy whatever powers of nutrition wood might originally contain. The chemical action of vegetable seems unable to produce the least effect on coal, and not the least particle of it has ever been found in the structure of vegetables, though mixed with the earth and water in which the plants are growing in the form of the most impalpable powder. Whether animal chemistry is able to do what vegetable organization cannot, remains to be seen; though if there is no mistake in the statements alluded to, it would seem probable that this intractable substance, is, in some way made subservient to the nutrition of animals.

ab at Mr. Jamieson's thrashing machine, therefore shall now communicate some particulars concerning that noble implement, imparted by my friend Fairbairn, to whom the sole direction and superintendance of it is entrusted. The machine is wrought generally by water, but has a six-horse impelling power also added, which prevents inconvenience in the driest season; though, except in the summer months, and sometimes in autumn, a full supply of water is rarely wanting. The over wheel is large, and placed on it gentle declivity, affording the impelling power its full weight, and throwing off the water cleverly, without hanging on or obstructing the velocity of the wheel by remaining in the tail dam.—The barn or house in which the corn thrashed is of dimensions, being fifty feet in length, twenty-four in breadth, and twenty feet in height of side walls above the lower floor, which gives a large storage for thrashing corn and offal, till time is allowed for cleaning the whole by hand-farmers for the market. This is a convenience, I am told, too much neglected in all the original houses; and owing to the want of it, thrashing must often be given up, till the offal or broke is arranged and put in less bulk. I am informed that with wind machines, the want of barn room has been found a serious disadvantage, as often the impelling power is lost before matters can be put in order for using it. But to return from this digression. The drum of Mr. Jamieson's machine is three feet in diameter, five feet in length, armed with four scutchers or beaters, and moves with the velocity of 2400 feet per minute. To work this machine in a complete style, two men are required to feed the rollers; three girls or boys to open the sheaves, and hand them to the thrashing board; the same number of women to riddle the grain in the under apartment, and four men to remove and stack the straw. Generally a woman also is employed to clean the chaff-house and keep the offal in order. The corn is brought to the barn as wanted, by two one-horse carts closely boarded.—These usually have full employment; and as a man is required to cast or take down the stack, altogether sixteen hands and two horses are employed; though, in point of fact, the wages of two men, and three girls can only be charged against the machine, because the work of the others would have been equally called for, had the grain been thrashed in the old way by flails.

The saving to the owner, when such machines are employed, must, even in the first instance, be considerable; and, when the perfect way in which the grain is separated from the straw is taken into account, perhaps it may be equal to one-fifth or one-sixth of the gross produce. Fairbairn maintains that the saving is greater upon what, which formerly, when hand flails were used, was with every attention seldom thrashed clean, especially in cold raw seasons. He adds, that one hundred bolls, or fifty quarters of wheat may be thrashed in a day of eight hours, unless the grain has been sown or mowed; and that with oats a still greater quantity may be turned out. As the machine is provided with two pair of lanterns, the grain is, in many cases, fit for market after being once riddled; but the usual custom is to run it again through hand lanterns, Mr. Jamieson being very nice in dressing his grain that is to be marketed.

From the Edinburgh Farmer's Magazine.

LETTERS FROM A YOUNG SCOTCH FARMER, AT SERVICE TO HIS FATHER.—CONTINUED.

Class 2nd.

May 9. My residence with Mr. Jamieson continues to furnish me with instruction in every branch in rural work; and nothing has occurred to obstruct or lessen the enjoyment repeatedly expressed in my former letters. My master is kind and communicative. My fellow servants join in promoting his views to improve and instruct me; and hitherto the slightest difference has not taken place between me and any of the numerous body of people belonging to this extensive and well regulated undertaking.

Yesterday Mr. Jamieson desired me to accompany him in his ride to examine the winter sown wheats. The break of one hundred acres, after summer fallow, upon which grass seeds were lately sown, looked astonishingly well. It had been thinly seeded, a practice Mr. Jamieson is fond of upon well prepared ground, and was tillering or stooling with the greatest vigor. The ear is already fully formed; though Mr. Jamieson says it will not come out of the shot blade in less than a month. He added that smut or black may be observed in this early stage, though after the most attentive investigation the smallest sign of that abominable disorder could not be discovered.

The field of wheat after beans appears to be considerably thicker seeded than the one after fallow; and the reason assigned by Mr. Jamieson for the difference was, that upon a bean stubble, the plants rarely gather so freely as those upon a well worked fallow fresh impregnated by manure. I noticed, however, that this field was green and thriving—that the blade was broad, and in most places twisted something like a screw. The soil is a heavy loam which Mr. Jamieson says is better calculated for carrying superior crops, both as to quantity and quality, than of the other varieties.

Our lambs were handled last week, and proved to the satisfaction of the butcher.—He marked one hundred that are to be removed to-morrow. I think that Howard said twenty score were sold, and that the remainder are to be weaned and hogged.—They are going with their dams upon rich grass; and also received ruta бага till about the middle of April.

Elliot has got all the turnip land cross ploughed and is now employed at the summer-fallow. He has already run over some of the bean land with the scraper or Dutch horse-hoe and has set apart eight horses, and the like number of men, for ploughing and cleaning the bean and turnip crops of this year. The best and steadiest hands are selected for this purpose, as it requires dexterity and attention. Of this husbandry, Mr. Jamieson has promised me a full description at a leisure hour. My corps have of late been much employed in scouring ditches and cleaning hedges, on which matters Mr. Jamieson bestows much attention. They are thinned a little by a draft of four to Elliot for his bean ploughs; and these were men who had been in habits of receiving similar employment in former seasons.

May 15. Hitherto I have said nothing

ab at Mr. Jamieson's thrashing machine, therefore shall now communicate some particulars concerning that noble implement, imparted by my friend Fairbairn, to whom the sole direction and superintendance of it is entrusted. The machine is wrought generally by water, but has a six-horse impelling power also added, which prevents inconvenience in the driest season; though, except in the summer months, and sometimes in autumn, a full supply of water is rarely wanting. The over wheel is large, and placed on it gentle declivity, affording the impelling power its full weight, and throwing off the water cleverly, without hanging on or obstructing the velocity of the wheel by remaining in the tail dam.—The barn or house in which the corn thrashed is of dimensions, being fifty feet in length, twenty-four in breadth, and twenty feet in height of side walls above the lower floor, which gives a large storage for thrashing corn and offal, till time is allowed for cleaning the whole by hand-farmers for the market. This is a convenience, I am told, too much neglected in all the original houses; and owing to the want of it, thrashing must often be given up, till the offal or broke is arranged and put in less bulk. I am informed that with wind machines, the want of barn room has been found a serious disadvantage, as often the impelling power is lost before matters can be put in order for using it. But to return from this digression. The drum of Mr. Jamieson's machine is three feet in diameter, five feet in length, armed with four scutchers or beaters, and moves with the velocity of 2400 feet per minute. To work this machine in a complete style, two men are required to feed the rollers; three girls or boys to open the sheaves, and hand them to the thrashing board; the same number of women to riddle the grain in the under apartment, and four men to remove and stack the straw. Generally a woman also is employed to clean the chaff-house and keep the offal in order. The corn is brought to the barn as wanted, by two one-horse carts closely boarded.—These usually have full employment; and as a man is required to cast or take down the stack, altogether sixteen hands and two horses are employed; though, in point of fact, the wages of two men, and three girls can only be charged against the machine, because the work of the others would have been equally called for, had the grain been thrashed in the old way by flails.

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May 20. Yesterday and to day ten acres of the turnip break were sown with ruta бага or Swedish turnip for late spring food. The heaviest part of the break was selected for this purpose, Mr. Jamieson being of opinion, that a strong loam, if incumbent on a dry bottom, is better calculated for ruta бага than lighter soils. The ground, had got three ploughings, was harrowed, rolled hand picked, till it was perfectly reduced, and free of root weeds, when it was formed into drills with 27-inch intervals by a bout of the plough. Into the interval of these drills plenty of dung was deposited, (Mr. Jamieson says that ruta бага requires almost double the quantity of dung that is sufficient for common turnips); after which the drills were split, and the dung completely covered, when the seed-barrow was run upon the top, which finished the operation.

Mr. Jamieson mentioned two particulars which deserve attention when ruta бага is sown. 1st. That, in forming drills, the plough out to go deeper than when common turnips are intended, so as a proper bed may be made for the extra quantity of dung given otherwise it will not be sufficiently covered. 2dly. That early sowing is advantageous, so as the root may have time to arrive at maturity. He added, that ruta бага is a dull growing plant, making slow progress in its passage; and that, if the field yellow turnip maintain its character, he is not sure but he will abandon the culture of ruta бага altogether.

The remainder of the break intended for turnip (90 acres) is in a forward state of preparation, and is now harrowed down to procure the vegetation of annual weeds.—The plain summer-fallow break is cross-ploughed, and receiving the full advantage of the present dry weather. I presume it will lie in this state till the seed is over; through Elliot says, if a shower comes soon, he will give it a trimming with his harrows, so as the root weeds may be loosened, and the growth of annuals forwarded. My squad, now reduced to six men, are turning dunghills from morning to night, except when detached for incidental purposes.

May 27. Mr. Jamieson has just furnished me with a circumstantial detail of his bean husbandry; some particulars of which must be interesting to you. According to his mode of cropping, this plant generally

ab at Mr. Jamieson's thrashing machine, therefore shall now communicate some particulars concerning that noble implement, imparted by my friend Fairbairn, to whom the sole direction and superintendance of it is entrusted. The machine is wrought generally by water, but has a six-horse impelling power also added, which prevents inconvenience in the driest season; though, except in the summer months, and sometimes in autumn, a full supply of water is rarely wanting. The over wheel is large, and placed on it gentle declivity, affording the impelling power its full weight, and throwing off the water cleverly, without hanging on or obstructing the velocity of the wheel by remaining in the tail dam.—The barn or house in which the corn thrashed is of dimensions, being fifty feet in length, twenty-four in breadth, and twenty feet in height of side walls above the lower floor, which gives a large storage for thrashing corn and offal, till time is allowed for cleaning the whole by hand-farmers for the market. This is a convenience, I am told, too much neglected in all the original houses; and owing to the want of it, thrashing must often be given up, till the offal or broke is arranged and put in less bulk. I am informed that with wind machines, the want of barn room has been found a serious disadvantage, as often the impelling power is lost before matters can be put in order for using it. But to return from this digression. The drum of Mr. Jamieson's machine is three feet in diameter, five feet in length, armed with four scutchers or beaters, and moves with the velocity of 2400 feet per minute. To work this machine in a complete style, two men are required to feed the rollers; three girls or boys to open the sheaves, and hand them to the thrashing board; the same number of women to riddle the grain in the under apartment, and four men to remove and stack the straw. Generally a woman also is employed to clean the chaff-house and keep the offal in order. The corn is brought to the barn as wanted, by two one-horse carts closely boarded.—These usually have full employment; and as a man is required to cast or take down the stack, altogether sixteen hands and two horses are employed; though, in point of fact, the wages of two men, and three girls can only be charged against the machine, because the work of the others would have been equally called for, had the grain been thrashed in the old way by flails.